POLYTECHNIC

Innovative Information Visualization of Symptom Cluster Management Data: A Systematic Literature Review
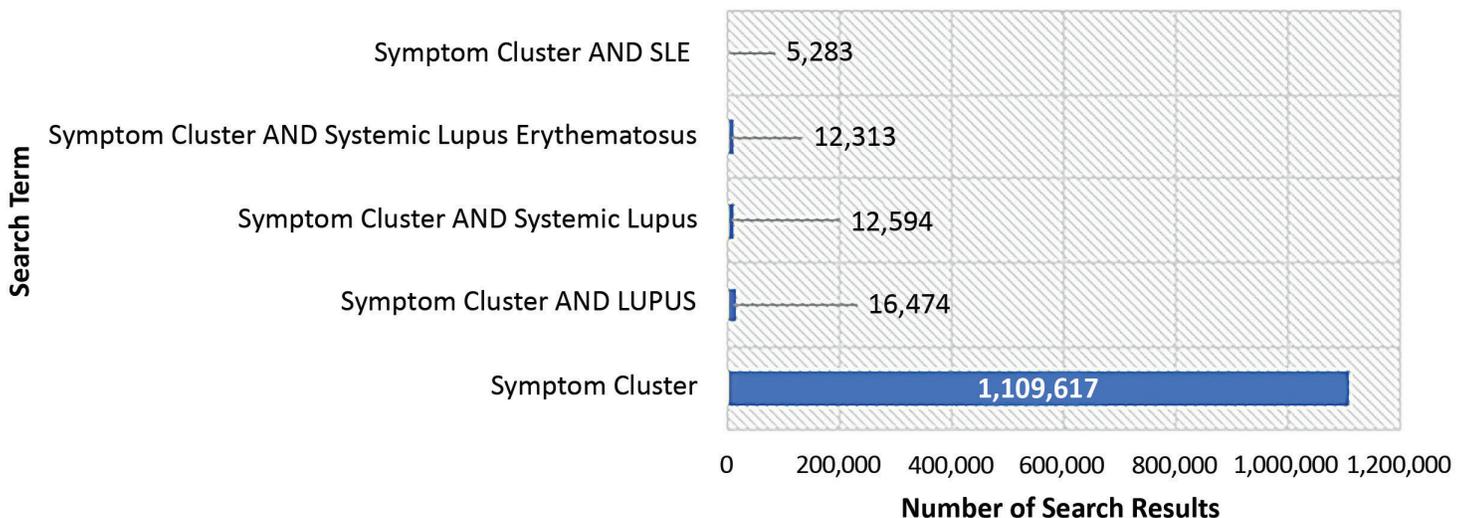
Student researchers: Kalika Q. Lacy, Sophomore, and Benjamin Carpenter, Junior

Systemic lupus erythematosus (lupus) is a heterogeneous disease due to the possibility of it affecting any part of the body. There is a wide range of symptoms that can manifest from lupus, which can often lead to misdiagnosis by making lupus look like another disease. We are conducting a literature search for a systematic review to assess what, if any, data visualization techniques have been used for lupus symptom cluster management. Our initial research search results show significant research in the area of cancer symptom cluster management using basic visualization techniques, but minimal to no published works in the area of lupus symptom cluster management. Our results will provide insight into different kinds of data visualization techniques currently used in symptom cluster management and the lack of innovative visualization techniques that could assist in the decision-making process for disease diagnosis and treatment.

Our preliminary results are limited. The figure provides an example of our results now, as well as what we expect to find in the future. The figure compares simple search results from the same database, PubMed. It analyzes the impact of the format of the word lupus as the secondary search term for the primary search term, symptom cluster.

While still in progress, preliminary results indicate there is a significant lack of published research on lupus symptom cluster management. Lupus is a complex disease. Outcomes from this work will inform the science of symptom cluster management and inform future understandings of management of symptom clusters.

Research advisor Vetria Byrd writes: "Lupus is a complex disease that can benefit from creative solutions to uncover the secrets it holds. Ben and Kali's contribution to the systematic literature review will inform the use of data visualization methods and techniques in the science of symptom cluster management and enable future work in lupus research."

"Symptom cluster" primary search from PubMed.

Lacy, K. Q., Carpenter, B. (2019). Innovative information visualization of symptom cluster management data: A systematic literature review. *Journal of Purdue Undergraduate Research, 9,* 90–91. https://doi.org/10.5703/1288284316959